

## ABSTRACT

By using an image signal acquired by picking up a sample to be inspected by a color video camera, penetrant inspection and magnetic-particle inspection which are non-destructive inspections are carried out so that deficiency candidates including a pseudo deficiency are automatically detected and are displayed on a screen. A real deficiency can be detected from the deficiency candidates displayed on the screen. As image data is stored in memory means, information of a deficiency can be repeatedly reproduced on the screen. In the penetrant inspection, the chromaticity at each position on an image is acquired, a deficiency candidate is extracted based on the chrominance, and the deficiency is distinguished from a pseudo deficiency based on the differential value of the chrominance. A polarization filter is used to eliminate regular reflection originated from illumination in the penetrant inspection, and an ultraviolet-rays cutting filter is attached to the camera to prevent noise in the magnetic-particle inspection. Equipped with both a white illuminating lamp and an ultraviolet illuminating lamp, both inspections can be carried out with a single probe.